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SHADE TREES

Shrubs

*Windbreak and
Ornamental*

Berries

*The kind I sell
in season*

Evergreens

Perennial Garden Plants

Perennial Flowers

Vines and Bulbs

Annual Garden Plants

— 1950 —

Paulsen Nursery And Floral Shop

Chas. Paulsen, Prop.

Minden, Nebraska

Phone 288-J

Located 3 Blocks East of the North Depot
Just East of the Swimming Pool

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Flowers for All Occasions

MRS. PAULSEN will be glad to talk with you about suitable potted plants, perennials, cut flowers, and flower arrangements for all occasions. Corsages are one of her favorite specialties.

at

PAULSEN NURSERY AND FLORAL SHOP

Phone 288-J

Minden, Nebraska

In this catalogue, you will find a number of experiments printed that were true under existing conditions. If your soil is the same as ours, the results will be the same; if your soil is different, you may expect different results. More or less moisture might make a difference, too. I have also listed plant foods that have in certain cases caused food deficiencies that resembled disease.

Floral Shop

The floral shop is used to display blooming plants, novel flower holders, pottery, and cut flowers. In the workshop are materials for making Christmas wreaths, and novel displays which will be made to order.

Baskets of flowers are arranged for anniversary and birthday celebrations or for community celebrations in lodges, churches, and homes.

Bouquets are also made for anniversary or community celebrations for lodge, church, or home.

Corsages are made for Valentine's day, Mother's day, anniversary, graduation, or for the best girl friend.

Wedding arrangements:

The bride can select arrangements from our books or pictures, for her flowers and those of her attendants for home or church and her own bridal bouquet.

Arrangements are discussed in detail which often takes considerable time. Sometimes several appointments are made, especially where Orchids or other rare flowers are wanted.

Funeral pieces of all kinds. We have books with pictures from which you may select pieces to be made up as pictured or altered to suit your requirements.

After the selections are made the size, colors, kind of flowers, ribbon, and gold letters are discussed in detail.

Greenhouse

In August, 1949, we bought the Hansen Greenhouse and Floral Shop. We have installed an air circulating gas heating unit, 85,000 B.T.U. which has ultra modern thermostatic control. It gives us an opportunity to study plant growth every day in the year and see blossoms every day. We have many varieties of plants and will be adding more as we get the room.

African Violets	Chinese	Lantana
Amaryllis	Evergreen	Lilies
Aster	Cyclamen	Lupines
Azaleas	Daisies	Petunia
Begonia	Ferns	Philodendron
Caladium	Feverfew	Poinsettia
Calla Lilies	Foliage Plants	Saintpaulias
Candytuft	Fuchsias	Snapdragons
Cannas	Geraniums	Succulents
Carnation	Gladioli	Verbena
Christmas	Gloxinias	Tritomas
Cactus	Hydrangeas	Vinca
	Ivy	Violet

We also grow annual flowers, cabbage, and tomato plants.

Roses

Hansa, large hardy\$1.00

F. J. Grootendorst, perpetual blooming..... .75

Red Roses

Red Radiance
Red Talisman

Multi-Colored

Talisman
President Hoover

Pink Roses

Editor McFarland
Pink Radiance

Polyanthas

Ideal
Gold Salmon

Yellow Roses

Golden Dawn
Mrs. P. S. DuPont
Sunburst

Climbing Roses

White Climbing Beauty
Red Talisman
Paul's Scarlet

White Roses

Caledonia
K. A. Victoria
Snow Queen

Each50c; 6 for..... .75 to \$1.00

Many of these tearoses are semi-hardy and tender in our climate. Planting the graft three or four inches deeper generally prevents them from freezing too bad. In winter most of them freeze close to the ground, but some of them freeze below the ground and still come up to bloom.

They require a sunny place and plenty of water. If the ground contains manure, watch out for white grubworms.

We recommend peat moss as fertilizer for roses.

Dusting sulphur is safely used for most rose bugs and copper sulphate for ground disease such as fungus.

We have many roses that are not listed.

These are hardy roses and patented roses at\$1.25 to \$1.50

Dahlias

These tubers are easily grown providing they get plenty of water and sun.

Name — Classification	Color
Bronze Call—Large	Bronze
Goodnight—Large	Black
Kentucky—Large	Orange
Nathan Hale—Large	Copper
Rose Ball—Large	Pink
Sultan of Hillcrest—Large	Yellow & Pink
Thomas Edison—Large	Royal Purple
Watchung Giant—Large	Golden Yellow
White King—Large	White
Troef—Large	Violet
Gemma Clara—Cactus	Yellow
Miss Belgium—Cactus	Burnt Orange
Scarlet Leader—Cactus	Geranium Red
Sheik—Cactus	Lilac Purple
Willy Flaton—Cactus	White
Atomic—Miniature	Pinkish Purple
Baby Royal—Miniature	Salmon
Blue Bell—Miniature	Blue-Violet
Fairy—Miniature	Pink
James Vick—Miniature	Red
Catherine—Pompom	Yellow
Clarise—Pompom	Orange
Edith Mueller—Pom.	Orange & Salmon Red
Joe Fette—Pompom	White
Mary Munns—Pompom	Lavender
Red Warrior—Pompom	Bright Red

Price — 15c to \$1.00

Bulbs

Regal Lilies, each	\$.25
Narcissus	12 for 1.00
Tulips—Double Red	12 for 1.00
Tulips—Mixed	24 for 1.00
Tulips—Holland, priced as to size and variety.	
Russian Lilies, each .....	.25
Dahlias, 30 varieties .....	.15 to 1.00
Cannas .....	.10
Glads	25 for 1.00
Tiger Lily	25c each, or 5 for 1.00
Star of Bethlehem	12 for .25
Grape Hyacinth	12 for .25
Chionodoxa Luciliae or	
Glory of the Snow	100 for 2.50

Gladiolus

Gladioli are by far the most popular garden flower. They grow in either poor or good soil and bloom vigorously providing they get plenty of water. We have over fifty varieties not mentioning our nice ruffled ones. First planting should be about May 1, and continue planting every two weeks until about July 10 for continuous blooming. The latest plantings will bloom just before frost.

Some of our customers buy hundreds of them, others just buy a few of the newer varieties.

Mixed Varieties—large	100 for \$4.00
Mixed Varieties—medium	100 for 3.00

Algonquin	Maid of Orleans
Blaze	Mrs. Mark's Memory
Blue Beauty	Margaret Beaton
Beacon	Majuba
Burma	Masquerade
Coral Glow	Margaret Fulton
Casablanca	Oriental Pearl
Corona	Prestige
Elizabeth the Queen	Picardy
Flora Farmer	Red Lighting
Hopman's Glory	Regent Scarlet
Jeanie	Rose Splendor
King Lear	Stoplight
King Tan	Snow Prince
King Klick	Valeria
Lavender Gold	Wanda
Lavender Prince	White Gold
Minuet	Yellow Herald

Perennials

Asters	\$.25
Alyssum	
Aquilegia (Columbine) .....	.35 to .50
Bleeding Heart .....	.50 to .75
Baby Breath (3 varieties) .....	.35 to .50
Blue Flax .....	.35
Buttercups (2 varieties) .....	.25 to .35
Chrysanthemums .....	.50
Coreopsis .....	.25
Creeping Phlox .....	.75
Coneflower .....	.25
Candytuft .....	.35
Coral Bell .....	.50
Chinese Lantern .....	.25
Carnation .....	.50
Daisies—Shasta	6 for 1.00
Daisies—English .....	.25
Delphinium .....	.25 to .75
Dianthus .....	.25 to .50
Gaillardia .....	.25
Gypsophila—Double .....	.50
Ghost Plant .....	.25
Golden Glow .....	.35
Hibiscus .....	.25
Iris .....	.10 to .50
Lupines .....	.50
Lavender .....	.30
Lily-of-the-Valley	12 for 1.00
Lythrum .....	.50
Oriental Poppy .....	.25
Phlox (4 varieties)	3 for 1.00
Platycodon .....	.25
Pyrethrum .....	.25 to .50
Peonies .....	.50 to 1.00
Ribbon Grass .....	.20
Statice .....	.35 to .50
Sweet William .....	.25
Stokesia .....	.25
Sweet Peas .....	.25
Spiderwort .....	.35
Tritoma, Red Hot Poker Plant .....	.50
Veronica .....	.15
Violets .....	.15 to .35
Violas .....	.20
Weigela .....	.75

Ornamentals

SHRUBS

Coral Berries, each	\$.10
Purple Leaf Plum, each	1.60
Bechtel's Double Flowering Crab, each.....	1.00
Hopa Flowering Crab, each.....	1.00
Snow Ball, each .....	.50 to 2.50
Korean Cherries, each .....	.75
Carragana, each .....	.50 to 1.00
Hydrangea, each .....	.75
Golden Bell, each .....	.50 to 1.50
Privet, each .....	.07 to .10
Pussy Willow, each .....	.50
Orange Quince .....	.75
Buddleia (4 varieties).....	.50
Bittersweet .....	.50 to 1.00
Spirea (6 varieties) .....	.10 to 1.50
Tamarix .....	.25 to 1.00
Persimmon, 12 ft.....	5.00
Elderberry .....	.50 to 1.00
Mock Orange .....	.50 to 1.00
Rose of Atica .....	.50
Barberry .....	.25 to 1.00
Cotoneaster .....	.30 to .75
Dogwood .....	.50 to 1.00
Flowering Almond .....	.75 to 1.00
Pride of Dorchester .....	.75
Nine Bark .....	.75
High Bush Cranberry	1.00
Lilacs —	
Common	100 @ 5.00
Red	1.00 to 2.00
White	1.00 to 2.00
French Double	1.00
German	1.00
Des Fontaines Double White.....	1.50
Mdm. LeMoine Double White	1.50
Pres. Loubet Double Purple Red.....	1.50
Red Japanese Maple, 1 foot.....	1.00
Weigela .....	.75

Crop Report on My Fruits

P—Planted

F—Failure

C—Crops

B—Blooms

Year—	39	40	41	42	43	44	45	46	47	48	49
I. Apples											
1. Anoka	P	C	C	C	C	C	C	C	C	C	C
2. Wealthy			P			C	C	C	C	C	C
3. Delicious			P			B	B	B	C	C	C
4. Whitney Crab	P								C	C	C
5. Red Bird											
6. Red Delicious			P			B	B	B	C	C	C
II. Cherry											
1. Early Rich.	P			C	C	C	C	C	F	C	F
2. Montmorency	P			C	C	C	C	C	F	C	F
III. Pears											
1. Douglas	P							C	C		C
2. Clapp's Favor.	P	C	C	C	C	C	C	C	C		C
IV. Peaches											
1. Seedlings				P			C	C	F	C	C
2. 3 Grafted Varieties					P			F	F	F	C
V. Plums											
1. Wauneta	P			C	C	C	C	C	F	C	C
2. Apricot	P			F	F	F	F	C	C	C	C
3. Omaha		P				C	C	C	F		C
VI. Apricots											
1. Manchurian		P			C	C	C	F	C	C	C
2. Morpark		P							C	F	C
VII. Quince											
1. Japanese											
VIII. Gooseberries											
1. Downing		P		C	C	C	C	C	C	C	C
2. Hutton		P		C	C	C	C	C	C	C	C
3. Pickwell								P	C	C	C
IX. Dewberries											
		P	C	C	C	C	C	C	C	C	C
X. Boysenberries											
		P			C	F	F	C	F	F	F
XI. Blackberries											
		P			C	C	C	C	C	C	C
XII. Youngberries											
		P			F	F	F	F	F	F	F
XIII. Currants											
					P			C	C	C	C
XIV. Red Rasp.											
	P		C	C	C	C					C
XV. Black Rasp.											
	P		C	C	C	C	C	C	C	C	C
XVI. June Berries											
		P		C	C	C	C	C	C	C	C
XVII. Grapes											
	P			C	C	C	C	C	C	C	C
XVIII. Bush Cherries											
	P	C	C	C	C	C	F	F	F	F	F

Fruit Trees

APRICOT

Apricot Seedlings	\$.50 to \$1.00
Apricot Seedlings, small	10 for 1.00
Apricot—Thomson's Early	1.50

Other apricots are semi-hardy and are sold as such here.

APPLE

	Each	5 Small	6 Large
Anoka	\$.50—\$1.00	\$2.00	\$5.00
Early Harvest .....	.50— 1.00	2.00	5.00
Haralson .....	.50— 1.00	2.00	5.00
Delicious Red .....	.50— 1.00	2.00	5.00
Double Red			
Jonathan .....	.50— 1.00	2.00	5.00
Duchess Red .....	.50— 1.00	2.00	5.00
Yel. Transparent .....	.50— 1.00	2.00	5.00
Whitney Crab .....	.50— 1.00	2.00	5.00
Wealthy .....	.50— 1.00	2.00	5.00
Winesap .....	.50— 1.00	2.00	5.00

5-N-1 APPLE

This means five different varieties grafted on one tree. Each\$2.50

CHERRY

Sour or Sweet Yellow Glass

	Small	Medium	Large
Sweet Yellow Glass	\$1.25	\$1.75	\$2.00
Montmorency	1.25	1.75	2.00
Early Richmond	1.25	1.75	2.00
English Morello	1.25	1.75	2.00

PEACH TREES

Peach	\$.50
Polly Peach	1.25

PEAR

	Small	Large
Clapp's Favorite	\$1.25	\$1.50
Bartlett	1.25	1.50

NUT TREES

Northern Grown Seedlings

Walnut	\$1.00 to \$2.50
Pecan	each 50c or 3 for 1.00
Hickory	each 50c or 3 for 1.00

PLUMS

	Small	Medium	Large
Apricot Plum	\$1.25	\$1.50	\$1.75
Compass	1.25	1.50	1.75
Wauneta	1.25	1.50	1.75
Sapa	1.25	1.50	1.75
Superior	1.25	1.50	1.75
Toka	1.25	1.50	1.75
Omaha	1.25	1.50	1.75
Opata	1.25	1.50	1.75
Quince		2.50	

GRAPES

Concord	25c each; 5 for \$1.00
Niagara	25c each

Number of Trees and Plants per Acre

Varieties; distance apart—number per acre

Apples; 30 x 30 = Trees 48

Apricots 20 x 20 = Trees 108

Cherries, Sour 18 x 18 = Trees 134

Cherries, Sweet 24 x 24 = Trees 75

Grapes 8 x 8 = Vines 680

Peaches 18 x 18 = Trees 134

Pears 26 x 26 = Trees 64

Plums 16 x 16 = Trees 170

Plums 18 x 18 = Trees 134

Blackberries 3 x 6 = Bushes 2420

Red Raspberries 3 x 6 = Bushes 2420



Wayzata Everbearing Strawberries

Bush Type — No Runners

Under intensive irrigation we recommend the Wayzata Bush type divisions above all others. It is the favorite of about 99% of our customers.

The Gemzata easily takes second place.

Four others (all producing runners) are about equal for third place.

The Wayzata is a very large, strong vigorous plant about ten to twelve inches high the second year if it has been well fed and watered. The berries are very large and more uniform than most varieties.

The first bloom is generally the largest berry of the eight on the flower stem. Flowers are carried high so this makes it by far the easiest everbearing to pick.

The seeds are so small that they are hardly noticed. The flavor of the Wayzata is mild and sweet.

It is excellent for freezing and requires little sugar when canning.

The Wayzata is perfect flowering needing no other variety to pollinate it.

It is bush type because only two or three plants out of a hundred have any runners. Some Wayzata are semi-bush type and sell at a cheaper price as they are propagated from runner stock. These runner plants resemble the Gemzata. We recommend that the plants be set fifteen inches to eighteen inches apart in the row and that the rows be two and one half feet apart.

Plant them a little lower than they grew in the Nursery because the water will wash away the soil between the rows when using intensive irrigation which all everbearing strawberries require.

We prefer irrigation rather than mulch, and irrigate on an average every four days except when the temperature gets up above 100 degrees, then we irrigate every two days soaking the soil eight to twelve inches deep.

In porous soil watering every two days may be necessary. The Wayzata bears a good crop before July first then it takes a two-weeks rest and then starts to bear steadily until the thermometer reaches as low as 25 degrees above zero. Each picking is heavier than the previous one.

In 1946 from July 15 to November 10, we retailed 1200 quarts of Wayzata Everbearing strawberries, field run, at 50c per quart, from one fifth of an acre. At that rate you could expect \$3,000.00 per acre.

Picking costs were 10c per quart, boxes cost 1½c each.

Phosphates are generally needed at the rate of two to four pounds per 100 square feet, mixed with one ounce of urea for extra yield. These should be mixed and worked into the soil. One fourth to one half pound nitrogen can be added if the soil needs nitrogen.

Occasionally a trace of zinc or copper may increase the yield 5 or 10%.

The plants can be planted in hard or loose ground. The advantage of hard ground is that it does not wash as much as the loose ground, and water soaking will generally loosen it.

Due to the big demand for bush type Wayzatas we quote the following prices:

Wayzata Bush Type —

25 divisions	\$3.00
50 divisions	5.25
100 divisions	10.00
25 potted plants, prepaid	3.75



Bush Type Wayzata Plant

Prices on Gemzata, Streamliner, Mastodon, Superfection, and Green Mountain.

25 plants	-----	\$1.00
50 plants	-----	1.75
100 plants	-----	3.00
Other varieties of Everbearing, 100 plants		3.00

New Sioux June Bearing Strawberry

This Strawberry plant was put out on trial by the Extension Service of the University of Nebraska from the North Platte Experiment Station.

Price—\$3.00 per 100

Berry Plants

Berries will sometimes grow without much care, but will grow better if conditions are made favorable.

Moisture and windbreak are very essential.

Moist, fertile soil attracts earthworms which seem to benefit many plants.

I believe our soil is very good but it is often so dry that plants cannot get minerals in soluble forms. Heat, frost, and moisture will often get minerals in soluble form if they are given lots of time.

Pruning may be done in dry weather after the fruit has been picked but many prefer to prune when plants are dormant just before budding in the spring.

If the ground gets hard, common manure will help things grow and make better soil if sufficient water is used. Peat moss and wood ashes, too, are useful.

Raspberries

St. Regis Everbearing, 12 plants	\$1.00
Latham Red, 12 plants	1.00
Cumberland Black, 12 plants	1.00
Boysenberry, 6 plants	1.00
Nectarberry, 6 plants	1.00
Youngberry, 6 plants	1.00
Dewberry, 25 plants	1.00
Thornless Boysenberry, each .....	.50
Mulberry, each .....	.25

Blackberries

Alfred, 8 plants	1.00
Cumberland, 8 plants	1.00

Gooseberries

Hutton, each .....	.50
Downing, each .....	.50
Native, each .....	.25
Currants, Red Lake, each .....	.40

Berry plants are all home grown.

Rhubarb

Canada Red:

No seed stalk, red and very sweet... 2 for \$1.00

MacDonald:

No seed stalk, larger than above... 3 for 1.00

Evergreens

Arbor Vitae, 1 to 3 ft.	\$1.00 per ft.
Arbor Vitae, Compacta	2.00 per ft.
Pine, Yellow or Ponderosa .....	.50 per ft.
Pine, White	1.00 per ft.
Pine, Mugho, each	\$3.00 to \$7.00
Silver Cedar, often called Silver Beauty	1.50 per ft.
Pathfinder	2.50 per ft.
Weir Scopulorum	3.00 per ft.
Blue Heaven	3.00 per ft.
Irish Juniper	2.00 per ft.
Swedish Juniper	2.00 per ft.
Norway Spruce and Black Spruce...	1.50 per ft.
(The real Christmas trees)	
Douglas Fir	2.00 per ft.
Colorado Blue Spruce.....	\$1.50 to \$5.00 per ft.
Grafted Koster Blue Spruce, 4-5 ft.	8.00 per ft.
Red Cedar, sheared	1.00 per ft.
(Inverted cone shape, 4 to 6 ft.)	
Windbreak size .....	.75 per ft.
Nice shaped 1 ft. size	About .40
Seedlings	About \$4.00 per 100

Transplanted seedlings grow better and are higher priced depending on shape and size.

Spreaders

Spreaders that are used for foundation plantings are scarce but we have a good supply.

	Width Measure
Sabina Juniper	\$1.50 per ft.
Pfitzer Juniper	2.00 per ft.
Bar Harbor Juniper	1.00 per ft.
Waukegan Juniper	1.00 per ft.
Badland Juniper	1.00 per ft.
Adora Juniper	1.00 per ft.
Irish Juniper	1.00 per ft.
Admeribles, not over 8 inches high	1.00 each
(Are often used for grave covers)	

Shade Trees

Some of these trees are twenty feet high and we have a limited supply of seedlings. The prices vary according to size and shape. They are priced very reasonable.

Our garden crops need windbreak protection as well as good soil and water. Some plants need shade. A home is more comfortable both in summer and in winter if the windbreak and shade are adequate.

A large list of shade trees offers selections suitable for every home. Some are drouth resistant as the cottonless cottonwood and box elder and beautiful in their place.

Cottonwood, 18 inch, per 100.....	\$1.50
Ash	1.00 to 3.00
Chinese Elm, 12 in. to 18 in., per 100.....	2.50
Birch, American White, 5 to 6 ft., each	\$2.50—up
Caragana or Siberian Pea Tree.....	.50 to 1.00
Moline Elm, 12 to 15 ft.....	5.00 to 7.50
American Elm, 3 to 4 inches cal.....	2.00 to 4.00
Hackberry, 6 to 8 ft.....	1.00
8 to 10 ft. \$1.50; 10 to 12 ft.....	2.50
Hackberry, 4 inch cal.	7.50
Redbud .....	.50 to 1.00
Pin Oak, 6 to 7 ft.	3.00
Burr Oak, 6 to 7 ft.	3.00
Sugar Maple, 6 to 8 ft., each	3.50
Kentucky Coffee Tree, 5 to 6 ft., each.....	2.00
Honey Locust	
Linden, 4 to 5 ft., each	1.00
Maple—Norway	1.00 to 3.00
Maple—Common	1.00 to 5.00
Maple—Red Schwedler's, each	5.00
Mountain Ash, 6 to 8 ft., each	3.00
Poplar—Lombardy, 7 ft. and down	Up to .50
Poplar—Lombardy, 10 ft., each	1.00
Poplar—Silver .....	.50 to 2.00
Poplar—Bolleana, up to 6 ft., per foot.....	.15
Over 6 ft., per foot .....	.20
Walnut—Black, 12 to 15 ft., each.....	2.50
Weeping Willow—Yellow, per foot .....	.15
Weeping Willow—Niobe	
Sycamore, 10 to 12 ft., each.....	5.00
Small size, 3 ft., each .....	.50

Hedge Plants

Privet, 2 yr. and 3 yr., per 100	\$10.00
Cotoneaster, per 100	30.00
Gnilla Maple, each	.25
Barberry	.25 to 1.00
Pussy Willow	Up to .50
Poplar—Lombardy, 5 ft. to 6 ft. and down	.50
Poplar—Bolleana, 15c per ft.; large 20c per ft.	
Lilac—Common, per 100	5.00
Lilac—Double, each	1.00

Vines

Trumpet Vine	Engelmann's Creeper
Climbing Rambler	Silver Lace Vine
Bittersweet	Wisteria

Cuttings for Planting

\$1.00 per 100

Lombardy Poplar Cuttings can often grow without irrigation, but under irrigation they can grow seven feet tall in one year. If you wish to grow them without irrigation, summer fallowed soil is by far the most satisfactory.

With experience you can grow many trees from cuttings.

Scarce Item

A Real Novelty —

1½ to 2 inch bulbs	\$1.50
1 to 1½ in. bulbs	\$1.00; ½ to 1 in. bulbs .25
Bulblets larger than ¼ inch	12 for 1.00
Small bulblets	3 doz. for 1.00

Feather Hyacinth, tasseled or Fair Haired Hyacinth, or Shredded Lilac are the common names given this Bulb; the correct name is MUSCARI COMASUM VAR. MONSTROSUM. A Most interesting hardy plant, similar to Muscari Plumosum.

Leaves are about two thirds inch wide and about one foot long. Raceme 1¼ to 1½ foot long, the top two thirds in shape resembles a sheared cone-shaped cedar, color a blue mist, often bending until it reaches the ground. The base of the cone is two to three inches in diameter, from there to the bulb is a smooth, naked stem.

Dormant July and August, root growth starts in September.

Experiments with Plant Foods And Water

SOIL PREPARATION

Conditions Change — Requirements Vary

In sandy soil the ground is loose and does not need plowing to loosen the ground. That is the reason for one-way disking and trash-farming or duck-footing. It stops erosion. Conditions seem to favor them. Most of the crops grown there are shallow rooted so that most of them are near the surface.

When trash is plowed under, it absorbs water from above and below causing the ground to dry out faster. When the trash is on top of the ground, it prevents heating and drying out and checks erosion by water and wind. Results seem to be better crops.

Summer fallowing produces large crops in dry land areas. One of the main reasons is the accumulation of moisture. The moisture rots the trash one year but seldom is enough to grow a crop the same year. Perhaps summer fallowing also gets rid of injurious insects and worms. It is quite possible that the time and weather makes needed minerals available to plants as well as nitrogen.

Heavy Ground

Contrasting Heavy Soil and Light Soil.

Heavy soil needs occasional deep plowing or loosening for many plants, although many plants like rather firm seed beds. A firm seed bed starts capillary action to work to supply moisture for the seed.

On wet soil the seed will start on top of the ground as is often seen in volunteer wheat or oats. In dry weather this does not occur.

In dry weather corn can easily be planted six or eight times its length; that is true of most seeds grown here.

Those requiring much moisture grow best on top of the ground in moist weather, some of them require shade and have a narrow temperature range. These conditions can be created here only in enclosed boxes with light, heat, and moisture regulation unless greenhouses are used.

Where rainfall annually is 60 to 100 inches, nurserymen plant trees about the same depth that they were before they were dug. In dry, well-drained ground, here, we often plant them 12 to 18 inches deeper than they were in the nursery. If trees were planted 12 to 18 inches deeper where the rainfall was very heavy, the trees would die because the

roots would fail to get sufficient air. Most of the trees that die in this area die from insufficient watering, then too, a few die because there is no windbreak.

Spraying

Most of the spraying done is useless, except for the water it contains.

When evergreens get full of spiders, give the trees a heavy sprinkling and they will take care of themselves until they are dry again. Then sprinkle again until spiders are few and far between.

When ash trees get full of borers, give them plenty of water for three or four years and they will whip the borers. Many other trees will do the same.

When cucumber bugs eat the plants, the soil has insufficient lime and perhaps water. If these are provided, cucumbers grow well, especially in well manured ground.

Many plants; such as, cabbage, cauliflower, broccoli, lettuce, celery, peas, beets, cherries, plums, etc., like lime. Elm, linden, and other plants like small amounts of it, although it will kill blueberries and make acid loving plants look sick.

Strawberry plants like lots of water and phosphates; nearly all trees and plants like small amounts of it.

Our soil here is rich in potash but sometimes bulbs respond to feeding extra potash.

The plants that do not respond to lime often like sulphur.

Experiments on Bindweed

In 1944 I plowed up bindweed on four plots of land where the bindweed was thick and used four methods of cultivation to keep it down.

Plot I. I planted nothing, but hoed it every eight days in the growing season. The crowns were perhaps one-fourth smaller, but there seemed to be as many.

Plot II. I planted in strawberries and soaked well every four days. Results were about 98% kill, those remaining were all in the strawberry hills. These were also hoed every eight days.

Plot III. I planted in sweet corn and irrigated when needed and hoed every eight days. By August, 1944 I had a perfect kill.

Plot IV. This plot I had hoed and watered irregularly. The results were best when hoed while wet. Perhaps this indicates wounds bleed when wet.

My conclusions were that moisture, shade, and hoeing can kill them in six months, but that hoeing while wet is very effective.

Spraying Bindweed

Some places it is impossible to irrigate or cultivate so I have experimented with weed spray or 2-4-D. I find that I can get about 95% kill when the ground is dry and the weather 80 to 90 degrees, but there are always a few left and there are a few seeds that sprout. This method is a good control measure when others are impossible. Sodium chlorate can make a perfect kill but it makes the ground barren for from three to five years.

Experiments on Tomatoes

In the year 1939 I planted about twenty varieties of tomatoes. I grew them under natural rainfall conditions. The Earliana was the poorest of the twenty varieties. The three best were Rutgers, Bonny Best, and Marglobe.

About 1944 I tested the three best varieties and the Earliana again under irrigation. The results under those conditions were different; the Earliana being the heaviest yielder by a shade. Under intensive irrigation, I believe it would have yielded much more.

Manure

In its broadest sense, manure is any substance applied to the soil to increase its productivity.

Trash and weeds contain humus of doubtful value. If ground is deficient in lime and phosphoric acid or other elements, they cannot be restored by plowing under manure that does not contain them. Manure from livestock that eat nothing but straw or corn stalks is very low in value as fertilizer. Manure from animals fed grain is more valuable; while manure from animals that are fed balanced rations is very valuable.

Ground rich in humus is harmed when heavily manured except under irrigation. Irrigated ground responds to great quantities of manure.

Nitrogen has often been beneficial in irrigated ground at the rate of 100 to 120 pounds per acre while other ground may show injury at above 20 pounds to the acre except in wet weather.

Users of nitrogen often waste it by using too much in dry weather or on small plants. Large plants or heavy feeders like celery will respond to light feeding of nitrogen every two weeks when the plants have reached fair size.

Phosphoric acid is slow acting but helps root growth and helps produce well developed flowers and

seed. The majority of plants here respond to it remarkably well indicating that the supply is below requirements. Sometimes benefits do not show until the second year.

Lime

The use of lime for growing crops is over 2,000 years old in many places, yet authors seldom write about it. I consider lime the best soil conditioner I have used. I use it for control of white grub worms, eel worms, and many other bugs.

A number of years ago a manufacturer of canned foods told me he inquired from the schools of Nebraska and Iowa about growing peas. The replies came back that peas were not adapted to his locality. During the depression he talked to a truck raiser from Minnesota who said he could grow peas anywhere. He hired the truck grower at \$250 per month and the results were the best peas he had ever seen.

The ground was prepared as usual except one ton of lime was put on each acre and when planted the seed was inoculated. He was well pleased to pay \$150 extra per month for the knowledge and demonstration.

When I plant cucumber, squash, and pumpkin seed, I use two tablespoonfuls of lime in every hill mixed with the soil. Result: no bug trouble. I also use it for cabbage, cauliflower, broccoli, lettuce, celery, beets, and onions.

Many trees; such as, elm, linden, cherry, and plum like lime in large quantities. Others like it in smaller quantities.

Warning—Do not use lime on acid loving plants; such as, blackberries and blueberries.

Sulphur

Sulphur can be used for control of bugs and worms on roses and other flowers and plants that do not like lime. Sulphur is often used for control of red spiders in evergreens. Sulphur oil sprays are used for control of San Jose Scale.

Copper Sulphate

Copper sulphate and other copper compounds can be used as a minor plant food and soil disinfectant where lime or sulphur are not used or in combination with them when used. Copper sulphate, either as a spray or plant food, will control many ailments caused by fungus. Lime, either as a plant food or spray, seems to help control lice and eating insects. For acid loving plants, sulphur often answers a similar purpose.

Plant Foods Must Be Soluble

1. Nitrogen	11. Urea	21. Silver
2. Phosphorus	12. Cobalt	22. Nickel
3. Potassium	13. Manganese	23. Lead
4. Calcium	14. Iodine	24. Aluminum
5. Magnesium	15. Zinc	25. Selenium
6. Sulphur	16. Chlorine	26. Copper
7. Sodium	17. Arsenic	27. Tin
8. Iron	18. Silica	28. Barium
9. Boron	19. Oxygen	29. Strontium
10. Carbon	20. Hydrogen	30. Molybdenum

Different kinds of plants require plant foods that are different. For example, the bean family; some varieties require much lime and other varieties grow well with little lime. Some varieties like water in large quantities, other varieties like a moderate amount.

Earthworms will kill blueberries but seem to benefit most plants.

Mushrooms can grow without any light, most plants cannot do so.

I have heard of different kinds of strawberries growing from Mexico to within the Arctic Circle.

The American Association of Nurserymen includes over 1300 nurserymen from the United States and Canada and perhaps a few associate members. I joined this association as a member several years ago.

Our aim is to beautify America. We also exchange ideas, seeds, plants, etc.

Nebraska has about a dozen members. We will help you in various ways to make the Parks and Roadsides more beautiful as well as planting orchards and landscaping your home whether in town or in the country.

Our first job is to gather seed and see that it is correctly labeled and of good quality. Seed collectors help collect and distribute the seed but the growing is done exclusively by nurserymen who specialize in growing seedlings. Some of these we sell, others we transplant one or more times and sell them as trees. Sometimes we find marked variations in foliage or fruit. When we consider these variations of value, we propagate by root or twig cutting, other times by budding or grafting. Then these grafts are shaded and watered as needed and transplanted to grow larger until they are ready for sale. These trees are generally transplanted when one year old or root-cut every two years. That system forms a compact root system that can be transplanted much more readily than a seedling tree that has never been transplanted.

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